

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1-16. (Canceled).

17. (Currently amended) An ~~computer~~apparatus, comprising:
means for sampling a temperature level associated with the operation of a ~~central~~
processing unit within said apparatus ~~computer~~;
means, responsive to said sampled temperature, for predicting future temperature
levels associated with the operation of a ~~central~~ said processing unit; ~~within said computer~~;
and
means for using said prediction for automatic control of temperature within said
computerapparatus; ~~said temperature control remaining transparent to a user of said~~
~~computerapparatus~~.

18. (Currently amended) An ~~computer~~apparatus, comprising:
means for sampling a temperature level associated with the operation of said
computerapparatus;
means, responsive to said sampled temperature, for predicting future temperature
levels associated with the operation of said computerapparatus; and
means for using said prediction for automatic temperature control within said
computerapparatus; ~~said temperature control remaining transparent to a user of said~~
~~computer~~.

19. (Currently amended) The computerapparatus of Claim 17, including means
for user modification of said temperature level predictions.

20. (Currently amended) The ~~computer~~apparatus of Claim 18, including means for user modification of said temperature ~~level~~ predictions.

21. (Currently amended) An apparatus, comprising:

~~a central processing unit (CPU);~~

means for sampling a temperature ~~level~~ within said apparatus and, using said sampled temperature at least once as a starting point, predicting future changes in said temperature; and

means, responsive to said means for sampling and predicting, for automatically adjusting the processing speed of ~~said central~~ a processing unit (CPU) by modifying the a clock signal utilized by the ~~central processing unit, (CPU)~~ to maintain said temperature level within said apparatus below a selected reference temperature ~~level when said CPU is not processing critical I/O.~~

23. (Currently amended) The apparatus of Claim 21, wherein said adjustments are accomplished within the ~~central~~ processing unit ~~(CPU)~~ cycles and do not affect the user's perception of performance.

24-73. (Canceled).

74. (New) An apparatus, comprising:

a temperature controller for monitoring temperature within said apparatus and, using said monitored temperature at least once as a starting point, predicting future changes in said monitored temperature; and

a clock manager adapted to receive a control signal from said temperature controller, said clock manager selectively stopping clock signals from being sent to a processing unit when one of: a) said monitored temperature rises to at least a selected reference temperature, and b) said predicted changes in said monitored temperature are rising at a faster than acceptable rate.

75. (New) An apparatus, comprising:

a temperature controller for monitoring temperature within said apparatus and, using said monitored temperature at least once as a starting point, predicting future changes in said monitored temperature; and

a clock manager adapted to receive a control signal from said temperature controller, said clock manager designating that a processing unit receives a first clock signal unless one of: a) said monitored temperature rises to at least a selected reference temperature, and b) said predicted changes in said monitored temperature are rising at a faster than acceptable rate, pursuant to which said clock manager designating that said processing unit receives a second clock signal.

76. (New) An apparatus, comprising:

a temperature controller for monitoring temperature within said apparatus and, using said monitored temperature at least once as a starting point, predicting future changes in said monitored temperature; and

a clock manager adapted to receive a control signal from said temperature controller, said clock manager reducing processing unit clock speed when one of: a) said monitored temperature rises to at least a selected reference temperature, and b) said predicted changes in said monitored temperature are rising at a faster than acceptable rate.

77. (New) The apparatus of Claim 74, wherein said processing unit is a central processing unit (CPU).

78. (New) The apparatus of Claim 75, wherein said processing unit is a central processing unit (CPU).

79. (New) The apparatus of Claim 76, wherein said processing unit is a central processing unit (CPU).

80. (New) The apparatus of Claim 74, further comprising:
a provision for user input coupled to said processing unit, and
a provision for user output coupled to said processing unit.
81. (New) The apparatus of Claim 75, further comprising:
a provision for user input coupled to said processing unit, and
a provision for user output coupled to said processing unit.
82. (New) The apparatus of Claim 76, further comprising:
a provision for user input coupled to said processing unit, and
a provision for user output coupled to said processing unit.
83. (New) The apparatus of Claim 74, wherein said clock manager further stops
clock signals from being sent to a bus coupled to the processing unit.
84. (New) The apparatus of Claim 75, wherein said clock manager further stops
clock signals from being sent to a bus coupled to the processing unit.
85. (New) The apparatus of Claim 76, wherein said clock manager further stops
clock signals from being sent to a bus coupled to the processing unit.
86. (New) The apparatus of Claim 83, wherein said clock manager further stops
clock signals from being sent to any other processors connected to the bus.
87. (New) The apparatus of Claim 84, wherein said clock manager further stops
clock signals from being sent to any other processors connected to the bus.
88. (New) The apparatus of Claim 85, wherein said clock manager further stops
clock signals from being sent to any other processors connected to the bus.

89. (New) The apparatus of Claim 74, wherein said temperature controller is on board said processing unit.
90. (New) The apparatus of Claim 75, wherein said temperature controller is on board said processing unit.
91. (New) The apparatus of Claim 76, wherein said temperature controller is on board said processing unit.
92. (New) The apparatus of Claim 74, wherein said monitored temperature is detected via a temperature sensor coupled to said processing unit.
93. (New) The apparatus of Claim 75, wherein said monitored temperature is detected via a temperature sensor coupled to said processing unit.
94. (New) The apparatus of Claim 76, wherein said monitored temperature is detected via a temperature sensor coupled to said processing unit.
95. (New) The apparatus of Claim 74, wherein said temperature sensor is mounted within said processing unit.
96. (New) The apparatus of Claim 75, wherein said temperature sensor is mounted within said processing unit.
97. (New) The apparatus of Claim 76, wherein said temperature sensor is mounted within said processing unit.
98. (New) The apparatus of Claim 74, wherein said temperature sensor is mounted on a printed wiring board (PWB) adjacent said processing unit.

99. (New) The apparatus of Claim 75, wherein said temperature sensor is mounted on a printed wiring board (PWB) adjacent said processing unit.

100. (New) The apparatus of Claim 76, wherein said temperature sensor is mounted on a printed wiring board (PWB) adjacent said processing unit.

101. (New) The apparatus of Claim 74, wherein said temperature is sensed on a periodic basis.

102. (New) The apparatus of Claim 75, wherein said temperature is sensed on a periodic basis.

103. (New) The apparatus of Claim 76, wherein said temperature is sensed on a periodic basis.

104. (New) The apparatus of Claim 101, wherein the frequency of said temperature sensing changes as said temperature reaches preselected threshold values.

105. (New) The apparatus of Claim 102, wherein the frequency of said temperature sensing changes as said temperature reaches preselected threshold values.

106. (New) The apparatus of Claim 103, wherein the frequency of said temperature sensing changes as said temperature reaches preselected threshold values.

107. (New) The apparatus of Claim 101, wherein the frequency of said temperature sensing is user modifiable.

108. (New) The apparatus of Claim 102, wherein the frequency of said temperature sensing is user modifiable.

109. (New) The apparatus of Claim 103, wherein the frequency of said temperature sensing is user modifiable.

110. (New) The apparatus of Claim 74, wherein said clock manager avoids selectively stopping clock signals from being sent to said processing unit when said processing unit is processing critical I/O.

111. (New) The apparatus of Claim 75, wherein said processing unit receives said first clock signal while processing critical I/O irregardless of said one of: a) said monitored temperature rises to at least a selected reference temperature level, and b) said predicted changes in said monitored temperature are rising at a faster than acceptable rate.

112. (New) The apparatus of Claim 76, wherein said clock manager avoids reducing said processing unit clock speed when said processing unit is processing critical I/O.

113. (New) The apparatus of Claim 74 wherein said clock manager selectively restores said processing unit clock speed when said monitored temperature drops to at least a selected reference temperature.

114. (New) The apparatus of Claim 74, wherein said clock manager selectively restores said reduced processing unit clock speed when a critical operation is detected

115. (New) The apparatus of Claim 74, wherein said clock manager selectively restores said reduced processing unit clock speed while a critical operation is processed.

116. (New) The apparatus of Claim 75, wherein said clock manager further designates that said processing unit receives said first clock signal when said monitored temperature drops to at least a selected reference temperature.

117. (New) The apparatus of Claim 75, wherein said clock manager designates that said processing unit receives said first clock signal in response to detection of a critical operation, regardless if one of: a) said monitored temperature rises to at least a selected reference temperature, and b) said predicted changes in said monitored temperature are rising at a faster than acceptable rate.

118. (New) The apparatus of Claim 75, wherein said clock manager designates that said processing unit receives said first clock signal in response to processing of a critical operation, regardless if one of: a) said monitored temperature rises to at least a selected reference temperature, and b) said predicted changes in said monitored temperature are rising at a faster than acceptable rate.

119. (New) The apparatus of Claim 76, wherein said clock manager raises said reduced processing unit clock speed when said monitored temperature drops to at least a selected reference temperature.

120. (New) The apparatus of Claim 76, wherein said clock manager raises said reduced processing unit clock speed when a critical operation is detected

121. (New) The apparatus of Claim 76, wherein said clock manager raises said reduced processing unit clock speed while a critical operation is processed.

122. (New) An apparatus, comprising:
a temperature controller for monitoring temperature within said apparatus and, using said monitored temperature at least once as a starting point, predicting future changes in said monitored temperature; and

a clock manager adapted to receive a control signal from said temperature controller, said clock manager selectively raising the frequency of clock signals being sent to a processing unit when one of: a) said monitored temperature drops to at least a selected reference temperature, and b) said predicted changes in said monitored temperature are at an acceptable rate.